SIG NIME: Music, Technology, and Human-Computer Interaction

Frédéric Bevilacqua
Ircam
1 Place Igor Stravinsky
75004 Paris - France
frederic.bevilacqua@ircam.fr

Sidney Fels
Dept. of Electrical and
Computer Engineering
University of British Columbia
Vancouver BC Canada
ssfels@ece.ubc.ca

Alexander R. Jensenius
Dept. of Musicology
University of Oslo
Oslo Norway
a.r.jensenius@imv.uio.no

Michael J. Lyons
Ritsumeikan University
56-1 Tojiin Kitamachi Kita-ku
Kyoto Japan 603-8577
michael.lyons@gmail.com

Norbert Schnell
Ircam
1 Place Igor Stravinsky
75004 Paris - France
Norbert.Schnell@ircam.fr

Atau Tanaka
Media Computing, Goldsmiths
University of London
London UK
a.tanaka@gold.ac.uk

Abstract
This SIG intends to investigate the ongoing dialogue between music technology and the field of human-computer interaction. Our specific aims are to consider major findings of musical interface research over recent years and discuss how these might best be conveyed to CHI researchers interested but not yet active in this area, as well as to consider how to stimulate future collaborations between music technology and CHI research communities.

Author Keywords
Music, Art, Technology, Interactive, Interface, HCI

ACM Classification Keywords
H.5.5 [Sound and Music Computing]: Methodologies and techniques

General Terms
Design, Experimentation, Human Factors, Performance

Introduction
Advances in digital audio technologies have led to a situation where computers play a significant role in most music production and performance [3, 6]. Digital technologies offer unprecedented opportunities for the creation and manipulation of sound, however the flexibility

of these new technologies implies a bewildering array of choices. Many musicians have embraced digital technologies and use computers directly to create music, leading to an ongoing development of new purely digital musical forms. But, other than in the niche genre of laptop performance, most would not describe the computer as a musical instrument. It is natural to seek to design interfaces which allow the computer to be played expressively in a fashion suited for human bodies and brains. More than a decade ago several of us held a workshop on New Interfaces for Musical Expression [6] at CHI'01, with the aim of discussing "how to play the computer" while exploring connections with the better established field of human-computer interaction. The workshop germinated an annual international conference that annually attracts several hundred participants. NIME is now a major venue for the publication of advances in music technology, with an emphasis on methodology from the broader field of human-computer interaction. In addition to the scientific and technical program, NIME includes a varied artistic program representing a wide range of musical genres and performance styles in which new interfaces are explored in concert hall and club events. Growth in the shared interests between music and HCI researchers was highlighted when a pioneer of new musical interface design and enthusiastic supporter of the nascent NIME community, Michel Waisvisz, presented the closing plenary at CHI'05 [2], while, in the same year, a pioneer of the CHI community, Bill Buxton, gave the NIME05 keynote [1].

Objectives

A major objective for the proposed SIG is to showcase major findings from the first decade-plus of the NIME conference and bring these to the attention of members of the human-computer interaction community who may not regularly attend specialized music technology conferences. CHI and related conferences continue to be venues for presenting work on some aspects of music related research [3, 4, 5, 7, 8] however such studies are relatively few when one considers the broad interest in music and its importance for exploring applications of emerging interaction technologies. Moreover some of the important findings being discussed in music related conferences such as NIME could be of general interest to researchers who may not have a specific focus on music related projects. This SIG is therefore proposed as a forum to explore the overlap in the CHI and NIME communities, as well as an outreach activity for the NIME community. We propose to invite any participants at CHI who may be interested in music as a potential domain for the study of human-computer interaction to join us for a discussion exploring the past, present, and future dialogue between interaction and music technology.

Specific objectives of the proposed SIG meeting are:

- Create an opportunity to encourage exchange between the CHI community and community of music and music technology researchers

- Provide opportunities for CHI'13 attendees to learn and participate in discussion about the newest work and most active topics in musical interface research

- Discuss strategies for continuing and expanding dialogue between the CHI community and music research communities such as NIME

Intended Audience

While the specific shared interests of the anticipated SIG participants are music and human computer interaction, we aim to attract a heterogeneous group that includes:

- Members of the CHI community who are interested in incorporating music or music technology related work into their research program but who are not already active in this area

- Members of the CHI community for whom music or music technology already forms a component of their research program but who do not actively participate in specialized music technology conferences

- Researchers in music and music technology who may be infrequent or first-time attendees at CHI'13 and who want to make contact with that segment of the CHI community involved in such work

- Musicians interested in finding out about cutting edge research issues in HCI and music

- Web and game designers interested in interactive audio and music

- Cognitive scientists and HCI theorists interested in the consideration of HCI in the context of music creation and performance

- Designers interested in the aesthetics of interactive audio and music systems

Format of the SIG Meeting

This SIG meeting will consist of a facilitated discussion addressing several topics of shared interest in the music technology and HCI research communities. Topics for discussion include:

- Design and aesthetics of musical interfaces
- Tools for prototyping new music technology
- Methodologies for evaluating musical interfaces

- Models of playability of new musical interfaces
- Theories of human action and perception in musical performance
- Mobile music making
- Collaborative music making
- Networked music making
- Music technology for novices
- Musical interfaces in the HCI curriculum
- Future of music, technology, and HCI
- How to better represent music themed research in the HCI community

Following a brief self-introduction, the overall context of the SIG and its specific objectives will be stated. Attendees will be asked for immediate feedback on the proposed topics and for additional topics. These will be prioritized to reflect relevance and general interest and the main session opened. Discussion will be facilitated by a moderator to preserve balance and flow as well as to cover as many of the key topics as constraints allow. Some time will be allotted at the end of the session for networking between all attendees and organizers.

IRCAM Evening Visit
Participants will be encouraged to attend a scheduled official evening tour of the facilities at IRCAM, which will feature research demos and provide further networking opportunities.

The organizers (ordered alphabetically)
Frédéric Bevilacqua is the head of the Real Time Musical Interaction team at IRCAM in Paris. His research concerns the development of interactive music systems based on gesture and motion. He co-chaired NIME 06 and his research work has been presented at HCI conferences such as CHI, TEI and DIS. **Sidney Fels** has been involved

in CHI and NIME communities for over a decade. He was one of the founders of NIME during its start as a workshop at CHI'01 and has continued as a member of the steering committee. He was co-chair of NIME 05 and has also served as SIGCHI Interactivity chair in 2011 and alt.chi chair in 2005. **Alexander Refsum Jensenius** is a music researcher and research musician working on full-body motion tracking for music and dance performance at the University of Oslo. He chaired the NIME 11 conference, and is currently head of the international NIME Steering Committee. **Michael J. Lyons** co-founded NIME when it was held as a workshop of CHI'01 and has continued as an active member of the steering committee since that time. He co-chaired NIME 04, and served as papers chair for NIME 01, 04, and 06. He has presented work at CHI and related conferences including INTERACT, IUI, and SIGGRAPH. **Norbert Schnell** is senior researcher and developer in the Real Time Musical Interaction team at IRCAM in Paris. He chaired NIME 06 and held the DAAD Edgard Varèse Guest Professorship for Electronic Music at the Technische Universität Berlin in 2007. His current work focuses on the animation of digitized sounds and their reenactment by playful interaction scenarios. **Atau Tanaka** works at the intersection of NIME and CHI, having been artistic chair of NIME 06, and also has many years live performance experience with new musical interfaces. He is a core member of the CHI Digital Art SIG, was co-organiser of the User In Flux workshop (CHI'11), and is co-chair of Interactivity, CHI'12.

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